State of California - California Environmental Protection Agency Department of Toxic Substances Control

INSPECTION REPORT

I. GENERAL INFORMATION

Company Name:	Lawrence Livermore National Laboratory
Facility Address:	7000 East Avenue Livermore, California 94550
Telephone Number:	(925) 423 - 4760
EPA ID Number:	CA2 890 012 584
Facility Type:	Storage and Treatment Facility
Regulated Units:	Permitted Units-Area 612, Storage and Treatment; Building 695, Storage and Treatment, Building 693, Container Storage; Interim Status- Area 514, Storage and Treatment, Building 233, Container Storage (inactive -undergoing closure); Tiered Permitting-Resin Mixing Unit.
Waste Streams:	Nearly all hazardous wastes, mixed wastes (RCRA hazardous with radioactive components); combined wastes (Non-RCRA hazardous waste with radioactive components)
Regulatory Status:	Permitted and Interim Status Facility; Permit effective November 19, 1999 ; Registered Hauler, Reg. No. 1351, Expires November 30, 2004.
Inspected by:	Luz Castillo; Essam Eissa
Dates of Inspection:	May 27, 28, June 1, 2, 3, 2004
Type of Inspection:	CEI CME O&M Focused Limited
Type of Business:	Research and Development Laboratory on: nuclear weapons, magnetic fusion, energy, lasers, biomedical and environmental sciences, and applied technology, and other nuclear applications research laboratory.

II. CONSENT

Consent to conduct inspection that involves: taking photographs, reviewing and copying records, questioning personnel and inspecting hazardous waste handling areas.

Consent given by (name and title): Sav Mancieri, Group Leader, Permits and Regulatory Affairs; Peter Yimbo, Environmental Analyst

III. BACKGROUND

Lawrence Livermore National Laboratory (LLNL) is a national laboratory owned and operated by the United States Department of Energy (DOE). LLNL is jointly operated by the University of California

Regents and DOE. LLNL operates a research and development facility to conduct research and development programs on nuclear weapons, magnetic fusion, energy lasers, biomedical and environmental sciences, and applied technology.

The research and development programs at LLNL generate hazardous, mixed and combined wastes. Mixed wastes are hazardous wastes, regulated under the Federal Resource Conservation and Recovery Act (RCRA), that also contain low level radioactive materials. Mixed wastes generated include rinsewater that contains organics or metals, spent caustic and acidic solutions, soils from clean-up activities, scrap metal, waste treatment sludges, and empty containers. Combined wastes are non-RCRA hazardous wastes that also contain low level radioactive materials. Combined wastes generated at the laboratory include waste oils, contaminated laboratory trash, and empty containers.

In February 1997, DTSC issued a Compliance Order to the United States Department of Energy (DOE) requiring DOE to comply with the Site Treatment Plan (STP) for the treatment of mixed waste at LLNL pursuant to RCRA as amended by the Federal Facility Compliance Act of 1992 (FFCA). The FFCA required DOE to prepare a STP for developing treatment capacities and technologies to treat all the facility's mixed waste to meet LDR. The STP consists of the Compliance Volume and the Background Volume. The Compliance Volume provides overall schedules for achieving compliance with LDR storage and treatment requirements for mixed wastes based on milestones (milestones have both an event and a date component, and is a fixed, firm, and enforceable obligations of DOE). Background Volume contains progress reports and other information. DOE is required to carry out all activities in accordance with the schedules and requirements in accordance with the STP and the Compliance Order.

The combined waste, which is regulated only under state law, is regulated under the terms of the Memorandum of Understanding (MOU) between DTSC and DOE. The MOU, signed on August 18, 1997, sets forth agreed upon terms for determining the future regulation of combined wastes at DOE facilities. DTSC and DOE agreed to complete a Memorandum of Agreement (MOA) for both agencies to discuss the requirements for future regulation of combined waste. Pending the finalization of an MOA, DTSC agreed to refrain from taking enforcement action against DOE with respect to the treatment, storage and disposal of combined wastes without a permit or authorization, provided the management of the combined waste streams is consistent with DOE.

LLNL is operating a hazardous waste and mixed waste storage and treatment facility under a Hazardous Waste Facility Permit (HWFP) issued to LLNL on November 19, 1999. The last modification on the permit was July 28, 2003. Modifications in 2001, 2002 and 2003 are listed in Appendices A and B of the Hazardous Waste Facility Permit (HWFP), Attachment B.

Prior to the issuance of the HWFP, LLNL was under interim status. The HWFP allowed LLNL to continue operating under Interim Status, the Building 233 Container Storage Unit and specific units at Area 514 Treatment and Storage Area, until the completion of the construction and activation of the DWTF Complex and Building 280 Container Storage Unit.

On April 13, 2001, LLNL informed DTSC of its intent to submit a permit modification request to remove Building 280 Container Storage Unit from the permit. On January 9, 2004, LLNL submitted a class 2 modification request to relocate the currently permitted storage capacity and operation from Building 280 to Building 696 R and to administratively close Building 280. The DWTF Complex commenced operation in September 2003.

Building 233 Container Storage Interim Status Unit is currently in the process of closure pursuant to LLNL's Phase I Workplan submitted and approved by the DTSC on April 26, 2004 (Attachment D). The final Closure Plan for Area 514 (Attachment D), was approved on April 30, 2004. Area 514 consisted of buildings and areas where hazardous wastes have been treated and stored. The treatment and storage areas were phased out of service as the new DWTF became active. Some of the treatment equipment at Area 514 were relocated to the DWTF. See Attachment B, HWFP, Exhibit A,Transition Summary: Transfer of Existing Waste Treatment Units to the DWTF. The Transition Summary in the permit did not include the transfer of the Area 514 Waste Filtration Unit (Dorr-Oliver Unit) to the DWTF. LLNL has submitted a Class 2 modification request to replace the Building 695 Wastewater Filtration Unit provided in the approved Operation Plan, with the Area 514 Dorr-Oliver unit.

Another Building that was also operated under interim status was Building 419. The Closure Plan for the building has not yet been approved by DTSC.

Since the effective date of the HWFP, DTSC has conducted yearly inspections at LLNL. During the March 2000, May 2002 and March 2003 inspections, class I violations were observed which included the: storage of mixed wastes containing trichloroethylene, toluene, and spent organic solid trash for more than one year; storage of hazardous waste drums containing organic liquid trimsol and waster; receipt, treatment and storage of liquid shredder waste without following the Waste Analysis Plan; and failure to provide employees with the required training courses for handling hazardous wastes. The Class 1 violations were settled in a Consent Order, HWCA 20020090, dated February 5, 2004 (Attachment B). The 2001 inspection found class 2 and minor violations on: container labeling and inaccurate operating record. A copy of the Consent Order and inspection reports from 2001 to 2003 are available on the DTSC website at http://www.dtsc.ca.gov/hazardous waste/LLNL.

IV. DOCUMENTS REVIEWED

a. Manifests, Bills of Lading, LDR's and Exception Reports:

Manifests from DTSC's Hazardous Waste Tracking System (HWTS)

Prior to the inspection, LLNL's manifest records from April 2003 to the early part of 2004, were reviewed from HWTS, DTSC's manifest database that tracks the movement of hazardous waste from the generator to the receiving treatment, storage and/or disposal facility (TSDF).

Manifests were picked at random from the database list and reviewed at the facility during the inspection. I requested a copy of manifest #21766614 (Attachment E), a tank shipment to a TSDF,

ETTP Site, TSCA Incinerator in Tennessee, where a portion of the waste (approx. 100 gallons) was returned back to LLNL. During the inspection, I asked LLNL how they managed the waste that was returned. The management of the returned waste was well documented as outlined below. No violations were noted.

Manifest # 21766614, tank shipment # Q00075852,Tank Truck (Attachment E)

9/04/03 -	shipped 3,000 gallons of mixed waste , D001, state waste code-741, to ETTP Site, TSCA Incinerator, Oak Ridge, Tennessee
9/08/03 -	received at TSDF 11/03 -100-gallons unpumpable waste was returned to LLN, in the same tanker truck.
10/17/03-	according to LLNL, the waste was dissolved with solvent; generated 450 gallons of waste; put in 10 55-gallon drums (Q00084968 - Q00084977)[10/17/03 memo]

Manifest # 21766644 (Attachment E)

11/10/03 -	shipped 10 55-gallons off-site, Q00084968 -Q00084977 to to ETTP Site, TSCA Incinerator, Oak Ridge, Tennessee
11/13/03 -	received by TSDF

TSDF and Generator Manifests

Manifests (TSDF and generator) from April to May 2004 were also requested for review. The manifest records were well organized. No violations were noted.

b. Contingency Plan:

The current Emergency Coordinator list, revision dated June 2003, was available and was reviewed. No violation was noted.

c. Training Plan and Records:

A review of four employees training records showed that most of the required training courses have been completed. I noted that most of the EP5120 courses were: not provided to the employee within 6 months of new assignment; or have not yet been provided [See Table I, Training Summary (course completion dates based on training records provided by LLNL to DTSC)].

NOTE: EP5120 - xxx, Waste Management Unit Inspection, Procedures and Emergency Response is an operational training for specific hazardous waste management units and treatment operations. It is a detailed hands-on instruction that provides information on unit specific hazards, operations, inspections, associated procedures, and emergency response actions (Part B Permit Application, Vol. 5/Appendix VII-B, rev March 2003).

In response to my request for additional information on the EP5120 courses that were not completed, or provided within six months of an employee's new assignment, LLNL submitted a response on August 11, 2004 (Attachment F, Also see Table I, Training Summary). The following summarizes LLNL's response:

Alfred Au, Legacy Waste Technician, start date-02/24/03

Mr. Au has completed all the required training courses for his position. See Table I, Training Records Summary and Attachment F.

Donald Dearing, Storage Driver, start date- 03/10/03

Course EP-5120-013, Size Reduction Unit - training has not been provided; unit has not been operated pending internal approval. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

Course EP-5120-087, Building 696S Drum Container/Crushing Unit - course was not provided in 2003. The unit commenced operation on February 12, 2004, the date the course was provided to Mr. Dearing. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary

Neil Elam, Waste Treatment Support Technician Contractor, start date- 5/12/03

Course EP5120-027, Building 695 Evaporator Units - training was not provided in 2003. The unit was not operational until July 26, 2004. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

Course EP5120 - 057, Container Storage Units - LLNL's submittal on August 11, 2004 indicated that the units began operation on September 25, 2003, but the training was not provided to Mr. Elam due to other facility activities. According to LLNL, the due date for an employee's training is within six months of when a new equipment is operational, therefore Mr. Elam was not due for training until March 25, 2004. Mr. Elam was provided training on April 20, 2004. According to LLNL, Mr. Elam was not in any unsupervised operations between March 26, 2004 to April 20, 2004. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

Course EP5120 - 081, Liquid Waste Processes - the unit was not in operation in 2003; operation began on 7/26/04. LLNL stated that in their submittal that Mr. Elam was provided the training on April 20, 2004 in preparation for the commencement of operation of the unit. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

Course EP5120 - 082, Solid Waste Processes - the unit was not in operation in 2003; operation of the unit began on May 28, 2004. According to LLNL's submittal, Mr. Elam received the training on April 20, 2004 in preparation for the commencement of operation of the unit. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

Course EP5120 - 086, Small Scale Treatment Process - operation of the unit commenced on October 22, 2003. LLNL's response stated that Mr. Elam was not due for training until April 22, 2003, six months after the unit was in operation. Training was provided on April 21, 2004. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

Course EP5120 - 089, Glove Box Process - operation of the unit commenced on October 22, 2003; Mr. Elam was due for the course on April 22, 2004, six months after the unit was in operation, according to LLNL. Training was provided to Mr. Elam on April 20, 2004. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

Todd Trammel, Waste Treatment Technician, start date -05/12/03

Course EP5120 -055, Building 695 Waste Filtration Unit - has not been provided. The unit is not yet operational up to this date. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

Course EP5120-027, Evaporator Units - training was not given in 2003 since the unit did not commence operation until July 26, 2004. Training was provided to Mr. Trammel on April 21, 2004 in preparation for the commencement of operation of the unit. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

Course EP5120-030, Centrifugation Unit - the unit is not yet operational. Training was provided to Mr. Trammel on April 26, 2004, in preparation for the commencement operation of the unit, according to LLNL. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

Course EP5120-031, Adsorption Unit - operation of the unit commenced on July 26, 2004. Mr. Trammel received the training on April 27, 2004 in preparation for the commencement of the operations of the unit, according to LLNL. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

Course EP5120-037, Lands PGS Pressure Washer - training was not provided within six months of assignment. According to LLNL, additional time was required for Mr. Trammel to complete his training due to equipment being rarely used, and not having enough experience and practice time to enable him to qualify on this unit. LLNL added that Mr. Trammel was not allowed to perform

unsupervised operations between May 12, 2003 and March 30, 2004. Training was completed by Mr. Trammel on March 30, 2004. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

Course EP5120-038, 1000-gallon Vacuum Tanker - training was not provided within 6 months of new assignment. According to LLNL, the additional time required was due to Mr. Trammel not having enough experience and practice time to enable him to qualify on the unit. Mr. Trammel was not allowed to perform unsupervised operations between May 12, 2003 and March 30, 2004. Training was completed by Mr. Trammel on March 30, 2004. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

Course EP5120-051, Drum Rinsing Station - the unit commenced operation on January 28, 2004. According to LLNL, Mr. Trammel was not due for training until July 28, 2004, six months from the operation of the unit. Mr. Trammel completed his training on April 22, 2004. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

Course EP5120-054, Debris Washer - unit commenced operation on May 28, 2004. According to LLNL, Mr. Trammel received the training on April 22, 2004, in preparation for the commencement operation of the unit. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

Course EP5120-062, Combination Hazards Glovebox Operations - the unit was in operation on October 22, 2003. According to LLNL, training for Mr. Trammel was not due until April 22, 2004, six months from receiving new assignment. Mr. Trammel received training on April 8, 2004. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

Course EP5120-080, Small Scale Treatment Labs Operations - the unit began operation on October 22, 2003. Mr. Trammel was due for training on April 22, 2004, six months from receivng new assignment. Mr. Trammel received training on April 21, 2004. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

Course EP5120-091, Double-Wide Radioisotope Glovebox Operation and EP5120- 092, Inert Atmosphere Glovebox Operation - these units began operation on October 22, 2003. According to LLNL, Mr. Trammel was not due for these courses until April 22, 2004, six months from receivng new job assignment. Mr. Trammel received training on these courses on April 22, 2004. See Attachment F, LLNL's August 11, 2004 response and Training Records. Also see Table I, Training Records Summary.

No violations were noted from the training records review for the above employees.

d. Incident Report:

According to Mr. Yimbo and Mr. Michalik, there were no hazardous/mixed waste related incidents that required the implementation of LLNL's Contingency Plan in the past year.

Based on LLNL's Fire Department database of incidents responded to by the Fire Department, none of them occurred at the permitted RHWM facilities (Attachment G).

Other incident /Emergency Action Taken by LLNL

In response to DTSC's request of detailed information pertaining to an incident at Building 235, the following was LLNL's reply:

The incident arose on February 20, 2004, when a laboratory researcher inadvertently added approximately one liter of 70% concentrated nitric acid to a container of methanol, ethanol, acetone, water and 7% nitric acid, and other minor constituents. The acid reacted with the organic solvent and nitrous oxide gas was generated. See Attachment C, SOV, and Violtions Section I, Violation 2. Assistance was requested and RHWM personnel responded by neutralizing the waste. One liter of ice was added and 50% sodium hydroxide solution was slowly added until the pH of the waste was raised close to neutral (pH=7). The waste container was transferred from Building 235, Room 1138, to a Waste Accumulation Area, Building 151C, then moved to the RHWM permitted facility. See Attachment G, DTSC CEI 2004 Response/June 10, 2004.

LLNL indicated that the incident at Building 235 did not require the implementation of LLNL's Contingency Plan.

e. Waste Analysis Plan and Records (Attachment H)

On May 21, 2004, LLNL sent DTSC a notification of wastes stored more than one year (Attachment H) for wastes, W209971 and W209973. The notification was sent in accordance with the Consent Order Docket No. HWCA20020090 dated February 5, 2004 (Attachment B).

According to the letter, the wastes were originally received on April 30, 2001, at LLNL's permitted waste storage facilities as mixed wastes not meeting Land Disposal Restrictions (LDR), and placed on the Site Treatment Plan (STP); the wastes were sampled and analyzed, and based on the analytical results, the containers met LDR and had been in storage for over a year. LLNL stated that upon receiving the validated analytical data, the containers were immediately placed on a shipment schedule to Envirocare of Utah. The letter received by DTSC did not include a detailed waste stream information attachment, as noted on the May 21, 2004 letter (Attachment H).

During the inspection, I requested the waste stream information on W209971 and W209973. The WDR's were faxed to me on June 22, 2004 (Attachment H). A copy of the waste analyses were

handed to me on July 19, 2004, after the discussion and issuance of the SOV. Ms. Salvo informed Mr. Eissa and I, that LLNL had found out that W209971 did not meet the LDR treatment standards, due to the concentrations of toluene and xylene at 120 and 280 mg/kg, respectively, that exceeds the LDR treatment standards. LDR treatment standards for toluene and xylene are 10 mg/kg and 30 mg/kg, respectively. As for W209973, the analytical results showed the waste met the LDR treatment standards.

The wastes were shipped to Envirocare of Utah on June 9, 2004, accompanied by manifest no. 23442420 and a signed land disposal certification stating that the wastes complied with the treatment standards specified in 40 CFR Part 268 subpart D (Attachment H). I asked Ms. Salvo, if Envirocare was notified of their new finding with W209971 not meeting LDR; Ms. Salvo said, "LLNL staff were working on it." On July 20, 2004, Ms. Salvo informed me via electronic mail (Attachment H) that Envirocare was contacted. Waste W209971 has not yet been placed into the ground, and Envirocare has put a hold on W209971 as well as W209973. See Attachment H for details. During our discussion with Ms. Salvo, I asked her about the waste characterization procedure that takes place when a waste is received at the permitted area. Ms. Salvo indicated that when a waste arrives at the permitted facility, sampling is normally initiated within 30 days. She said that what happened to W209971 and W209973 was an isolated incident. See Table III, Summary of Characterization/Tracking of W209971 and W209973 and Attachment H, for WDR and Waste Analysis Details.

Based on the documents reviewed, it took approximately 18 months and 10 months, from the date RHWM received W209971 and W209773, before a sample was collected. The analytical results were received approximately 11 and 4 months after samples were collected; from the date of receipt of the analytical results, LLNL completed the data validation after 6 months and 22 months, for W209971 and W209973, respectively; the characterization process was completed on 4/5/04 and 4/28/04, the dates lab data were validated.

A WDR Change Requisition was completed for W209971 and W209973 on 5/18 and 5/19, 2004, respectively. With the 3-year delay in completing the waste characterization process of sampling, analysis and data validation, LLNL failed to make a proper waste determination on W209971 for the purpose of land disposal restrictions. It appears that LLNL was not aware of the inaccuracy of their waste characterization results reading for W209971 until DTSC requested for the laboratory analysis. See Section VI,Violations Section I, Violation 4. LLNL shipped W209971 off-site for shipment certifying that the waste met LDR. See Section VI, Violations Section I, Violation 3. As for W209973, the waste met LDR standards as indicated on the LDR certification. However, LLNL stored Q00063853/W209773 for over a year. See Section VI, Violations Section I, Violation 5.

f. Operation Log

INVENTORY OF HAZARDOUS WASTES

LLNL's Hazardous Waste Facility Permit requires that the total volume of regulated and non-regulated waste and materials including radioactive materials shall not exceed the treatment capacities allowed in the permit. In addition, the permit requires that cumulative volume of regulated waste stored in all units including tanks at any one time shall not exceed 808,000 gallons [Attachment B, HWFP, IV.9. (a)]. Based on our review of LLNL's inventory of materials and wastes, including radioactive wastes, LLNL is in compliance with the storage capacities allowed in their permit, See Table II. No violations were noted.

TRACKING OFF-SITE WASTES

LLNL as TSDF, can only receive wastes from LLNL, Site 300. No violations were noted on the operating records for the following off-site containers. Wastes were properly tracked as shown below:

Manifest # 21766518, drum # Q78870 (Attachment E)

4/14/03 -	drum was received/stored at Area 612 (612-100)
4/30/03 -	transferred for storage at Area 625-A
5/08/03 --	bulked to Q0007727
5/08/03 -	Q0007727 transferred/stored at Building 612-5

Manifest # 97259009, drum # Q89403 (Attachment E)

3/15/04 -	received at Building 693-1000
3/18/04 -	shipped off-site, Manifest # 3034448, SET Environmental, Houston, Texas

CONTAINER TRACKING

As we conducted the walk-through, containers were picked at random in the storage areas, to determine LLNL's compliance with the operating record requirements. The container labeling information and location were noted and compared with the facility's operating record.

Each container has a barcode used for tracking the movement of the waste. The barcode on the waste container is scanned into Hazardous Waste Management's database, Total Waste Management System (TWMS) where various reports can be generated. Below are DTSC's findings from the review.

A Container Contents Report was provided for each container as requested. The Container Contents Report information include items required for an operating record such as: container number and waste disposal requisition numbers; waste type; EPA/State waste code(s); waste description, hazard property(ies), quantity, waste form; container location; manifest number (if shipped off-site); and TSDF start date. For wastes stored over a year, STP information or storage extension letters were requested, as applicable.

1. Labeling information and location of the following containers were compared to LLNL's operating record. No violations were noted on our records review for the following containers.

		Q86903 - 11/10/03;	Q79684 - 9/17/03;
Q88186 - 5/14/04;	Q88548 - 1/17/04;	Q20594*- 5/02/87;	
Q39757*- 4/24/97	Q201247- 5/25/04	Q70557 - 4/6/89	
		Q11350*- 7/13/95;	Q27529*- 7/31/97;
Q53488*- 3/16/00;	Q39769*** - 11/13/98	Q69630** - 7/02/02	
Q43514*- 4/01/88;	Q70619*- 7/20/01;	Q31342 -* 12/23/97	
Q88248 - 1/20/04;	Q88265 - 4/01/04;	Q88548 - 1/07/04;	

* Listed on STP
** Extension letter sent to DTSC,
*** Low level waste-Ca (combined waste, handled as Low level only per MOU).

2. Containers Q25730 and Q22515, Area 612-5. These boxes contained mixed wastes but were labeled, "hazardous waste.".

   Information from the Container Contents Report for Q25730/W113990 and Q22515/W111523, are as follows:

   Waste Description - Spent inorganic legacy wastes from re-packaging operations , lab debris, paper, plastic, crushed rums dry sorb, wood, contaminated with trichloroethane 1,1,1, carbon disulfide, methylene chloride, toluene and low level radioactive material. .Storage dates were as follows: Q00025739- 5/1/97 and Q00022515- 5/5/97. EPA Waste Code - F002, F005, 351; listed under STP as Mixed Low Level Waste Stream No. LL-W025.

   According to LLNL, W111523 and W113990 are not regulated as radioactive materials per Department of Transportation, 49 CFR, section 173.2a. Attachment Q, May 28, 2004 Internal memo from Olga Ligetti to Vicki Salvo. The labels were changed from mixed to hazardous waste on 5/24/04, for proposed shipment on 5/25/04, which was postponed. See Attachment Q, LLNL's response to DTSC's request for information on July 10, 2004. See Attachment C, SOV, and Section VI, Violations Section II, Violation 1.

   Containers Q25730 and Q22515 were shipped off-site to Envirocare of Utah, as hazardous waste, on June 9, 2004. Attachment Q, manifest no. 23442414.

3. Containers Q72880 and Q72881 were received at the 612-2A on 12/19/03. The WDR's for the 2 containers that were attached were different from the drum information. The WDR's were switched- Q0007280 had W240645, should be W240644 and vice versa. The correct WDR's for the containers were found and they were placed in the plastic pouch provided during the

inspection :Q72880/W240644, Q72881/W240645 (Attachment I). See Attachment C, SOV, and Section VI, Violations Section II, Violation 2.

The mixed waste in the containers were aqueous acid solution from raw samples, hazardous properties - toxic, corrosive. The wastes have the same TSDF Profile No.: SJ97-0064. See Attachment I.

4. Container Q88265 was received at 612-2A on 4/1/2004. The container had aqueous acid solution, from raw samples, hazardous properties - toxic/corrosive waste. See Container Contents Report on Attachment I. The drum label was observed with a missing HWM received date during the inspection. See Attachment C, SOV, and Section VI, Violations Section II, Violation 1.b.

TREATMENT UNITS INSPECTION AND PROCESS LOGS

Building 514, Tank Farm - This facility is currently undergoing closure. DTSC approved the Closure Plan on 4/30/04 (Attachment D).

Starting on 3/30/04, LLNL discontinued the daily inspection at Area 514, but continued with the weekly inspection. The contents of the tanks at Area 514 were transferred to the DWTF tanks on March 23, 2004 (Attachment J, Process Log, Tank # 695THL116 and 115). No violations were noted.

The Cold Evaporator side A (mixed waste) was last used on September 9, 2003 (Attachment J). The evaporator bottoms were cleaned out and 15 containers were generated. No violations were noted.

Building 695 Tank Farm (DWTF) - Daily inspection of the tanks at the new facility were requested and reviewed. No violations were noted.

B612 Drum Crushing Unit - the 2004 treatment record was requested. Treatment occurred on 4/1 and 4/14/04. No violations were noted.

B696S Crusher - records show that the unit was being used to crush radioactive only waste drums in Building 696. The Container Transaction Query was used to determine if the drums that were crushed were not hazardous; documents reviewed showed that the drums were triple rinsed prior to crushing. No violations were noted.

LLNL submitted a Class 2 modification request to DTSC on January 9, 2004, to transfer the B612 Drum Crushing Unit to building 696 (Attachment O).

Miscellaneous Unit Daily When In Use Inspection

LLNL conducts a daily inspection of DWTF's miscellaneous units when in use. During the inspection only 3 of the identified units in their Operation Plan had been in operation as follows: Solidification Unit; Debris Washer; Bulking Station/Rinsing Station. These units started operation on 4/22/04, 5/04/04, and 01/28/04, respectively. See Attachment J, Daily When In Use Miscellaneous Treatment Units. No violations were noted.

Solidification Unit - was first used at DWTF on 4/22/04. The Solidification Unit is located in the Debris Washer Room , Room 1036 (Attachment O, Documentation of completion table), which is different from what was provided in the approved Operation. The approved Operation Plan identified the location of the Solidification Unit in Room 1028. See Attachment A, Site Map, page 3.

The current location of the unit in Room 1036, was identified in the as-built drawing submitted to DTSC on 3/28/03 (Attachment O, As-built Drawing Cover Letter; also see June 8, 2004 submittal re: Documentation of Work Completed).

The 2004 Stabilization Treatment Log was reviewed. No violation was noted.

Debris Washer - the unit was first used on 5/4/04 (Attachment O, Documentation of completion table). Before wastes are processed in the Debris Washer, containers of wastes are first placed into a sorting table to remove wastes that do not meet the criteria for debris washing. The removed wastes are packaged into a separate container.

The use of a sorting table was not identified in any of the modification requests that LLNL sent to DTSC, nor in the Debris washing description in the approved plan (Attachment N) or the proposed modification submitted to DTSC on 9/22/03 or 01/09/04 (Attachment O, Item Nos. 99-NC-006 Mod 8-9 and 99-NC-006 Mod 8-12 and N). See Attachment C, SOV, and Section VI, Violations Section I, Violation 1.

Drum Rinsing Station - This portable unit replaced the Area 514 Bulking Station. The unit was first operated on 01/28/04 (Attachment J, Daily When In Use Inspection Log, Miscellaneous Units). No violations were noted.

NOTE: On August 8, 2003, DTSC authorized LLNL to commence operation of the newly constructed DWTF (Attachment P).

g. Inspection Records:

Area 612-1A and B, Area 612-2, Area 612 Tank Trailer Storage Unit

The daily inspection logs for Area 612- 1A and B did not record the presence of wet spots and liquid on the storage area floor from a leaking tent roof. See Attachment K, Inspection Log; Attachment C, SOV, and Section VI, Violations Section II, Violation 3.b.

In the east side of Container Storage Area 612-2, the sump was observed with at least 4 inches of rainwater which was not noted in the inspection log. See Attachment K, Inspection Log; Attachment C, SOV, and Section VI, Violations Section II, Violation 3.a.

Area 612 Tank Trailer Storage Unit, contained at least 6 inches of rainwater at the lowest point of the storage area, which was not noted in the Daily Inspection Log. See Attachment K, Inspection Log; Attachment C, SOV and Violations Section II, Violation 3.a.

Area 514, Buildings 693 and 695

Daily and weekly inspection logs from April through May 2004 were requested and reviewed for Area 514, Buildings 693 and 695.

The daily inspection at Area 514, currently under going closure, stopped on March 30, 2004. LLNL continues to inspect the area on a weekly basis. No violations were noted.

No violations were noted.

Buildings 419 and 233, Inactive Storage Units

Weekly inspections are conducted at Building 419. Since April 26, 1999, LLNL stopped inspecting some areas due to high potential for falling debris from ceiling material. See Attachment K.

LLNL stopped conducting weekly inspections at Building 233 after receiving a letter from DTSC approving their Phase I Work Plan for Building 233. The last weekly inspection was conducted on May 5, 2004. Attachment C, SOV, Section III, Minor Violation 1. On June 11, 2004, LLNL submitted a letter to DTSC requesting a reduction in the inspection frequency at building 233 from weekly to monthly. See Attachment K.

h. Annual/Biennial Reports:

LLNL submitted the 2003 Hazardous Waste Report to DTSC on April 15, 2004. See cover letter on Attachment L.

i. SB 14 Plans:

LLNL's Hazardous Waste Facility Permit requires the submittal of a Waste Minimization Plan every four years to DTSC. LLNL's last submittal was in 1999. The Summary Progress Report (SPR) was due on September 1, 2003. The SPR was sent to DTSC on August 29, 2003. See Attachment L.

j. Hauler Registration:

LLNL's Hauler Registration No. 1351 is current; registration expires on November 30, 2004 (Attachment M).

k. Permit Compliance Schedule

LLNL has submitted the following documents in compliance with Part V. Compliance Schedule of the Hazardous Waste Facility Permit (Attachment R). No violations were noted.

Revert Area 612-4 and Rooms 104, 105, and 107 to generator status, within 15 days of the effective date of Permit (11/19/99) - these areas are being operated under generator status.

Closure plans for Building 233 and Area 514, 180 days after effective date of Permit (11/19/99) - plans submitted on 5/12/00.

Decontamination procedures, 180 days after 11/19/99 - Letters dated 5/17/00, 6/02/00 and 6/27/00.

Small Scale Treatment report due on 3/15/00 and annually thereafter - DWTF commenced operation on 9/30/03, so there were no small scale treatment activities prior to DWTF operation. Small Scale Treatment Report was submitted on 3/15/04.

Engineer's certification for secondary containment system and tank system, 60 calendar days after completion of construction - submitted on 5/19/03.

Construction schedule for new facilities, 30 calendar days prior to construction - letter submitted 6/10/99.

As-built drawings of the new facilities - submitted on 3/28/03.

Notification to DTSC to inspect newly constructed facilities, 30 calendar days prior to commencement of operations - submitted on 07/17/03.

Updated Contingency Plan, 30 days prior to start of Building 695 operations - submitted 10/28/02; latest submittal of Contingency Plan was 6/2003 (not attached in this report)

I. Compliance With Consent Order

The Consent Order HWCA 20020090 (Attachment B), dated February 5, 2004, requires LLNL to submit semi-annually after March 5, 2004 (30 days of the effective date of the Order) an inventory of all treated wastes that meet LDR and that have exceeded the one year storage limit allowed in the permit.

During the inspection, I asked LLNL to provide information on the container status of 50 containers that have exceeded one year storage and storage extensions were requested, which would include: storage location, waste type, and LDR status.

In LLNL's submittal to the Container Status request, 10 containers out of 50, met LDR treatment standards (Attachment T). In a March 5, 2004 letter sent to DTSC for compliance with the Consent Order, LLNL indicated that there was only one container stored on-site that has been treated and met LDR (Attachment V). In my phone conversation with Ms. Salvo on the 10 drums that meet LDR treatment standards, Ms. Salvo indicated that the containers meet LDR, but they were not treated. Ms. Salvo said that the Consent Order (attachment B) requires the submittal of an inventory of wastes that had been treated and meet LDR. Since the 10 containers were not treated, LLNL did not include the 10 containers.

V. NARRATIVE OF OBSERVATIONS/DISCUSSION WITH OPERATOR

See Site Maps, Attachment A, for reference.

May 27, 2004

Upon arrival at the site, Mr. Essam Eissa, Mr. Dave Anderson and I (we) proceeded to the West Badge Office and we informed the Badge Office of our inspection. Messrs. Peter Yimbo and Earl Thomas met us at the Badge Office and we proceeded to the Environmental Protection Department office located at T-5475 for a pre-inspection meeting.

The meeting was attended by Lawrence Livermore National Laboratory (LLNL) and Department of Energy (DOE) personnel (See Attachment U). After a brief introduction from all the attendees, I informed them of our purpose to do a Compliance Evaluation Inspection (CEI) which would include a

walk-through at the permitted areas, and also the 90-day accumulation areas, specifically the Lab packing Area and the Receiving, Segregation, and Container Storage Unit. I stated that we would be spending more time at the newly-built Decontamination and Waste Treatment Facility (DWTF), to familiarize ourselves with the new units/processes. I also stated that after the walk-through, we would be conducting records review consisting of operating records, manifests, training records, and other records pertaining to hazardous/mixed waste management. I added that during the walk-through, we may be asking for photographs to be taken as necessary during the inspection. LLNL said they will be bringing along a digital camera with us for taking photographs. I informed them that Mr. Anderson, our Industrial Hygienist will be monitoring the storage areas with a Ludlum 19, as DTSC has a limit of 2mR per hour. Mr. Sav Mancieri asked if I would be having a close-out at the end of each day during the inspection. I responded that I will have a close-out on the last day of our inspection. I added that if we have any issues or concerns during the inspection, I would inform our LLNL escort(s). After LLNL personnel granted us approval for the inspection, we proceeded to the DWTF.

The inspection team were: LLNL- Mr. John Bowers; Ms. Kerry Cadwell; Mr. Peter Yimbo; Mr. Earl Thomas; Ms. Vicki Salvo; Mr. Richard Michalik; and Mr. Stan Terusaki, who joined us later during the inspection; DOE- Mr. Wen Kao. At DWTF, Mr. Bowers explained the various storage and treatment areas and various processes at the new facility. The following details the inspection:

Liquid Waste Processing (LWP) Area, Room 1028

Upon entering the LWP, I observed drums that were stacked 2 high. The drums appeared to be properly maintained, labeled and in good condition. The drums consisted of low level waste (LLW) and combined waste (LLW-California hazardous waste). During the walk-through I picked drums at random for later review of the facility's operating records; I recorded container Q00086903 dated 10/30/03 for records review. Portable tanks and other containers that were observed in the area also appeared to be in good condition, labeled and well maintained. No violations were noted.

Tank Farm

The Tank farm consists of nine 5,000-gallon cylindrical tanks with conical bottoms. Six (6) of the tanks had wastes in them and the rest were empty. The tanks containing wastes had the blend or treat number marked on the label. No violations were noted.

Miscellaneous Treatment Units Not in Operation

I observed the following units that were transferred from Area 514: Cold Evaporation Unit; Gas Adsorption Unit; Centrifuge Unit (portable); Portable Blending Unit; and Tank Blending Unit. According to Mr. Bowers, the units have not been in operation since they were transferred to DWTF:

Filtration Unit

The new Filtration Unit planned for installation at DWTF was never installed. Mr. Bowers said the Dorr-Oliver Filtration Unit will be installed instead. On January 9, 2004, LLNL submitted to DTSC a Class 2 modification request to replace the Filtration Unit described in the Operation Plan with the Dorr-Oliver Filtration Unit from Area 514 (Attachment O, Item 99-NC-006 Mod 9-13).

Rinse Station

This portable unit was not in operation during the inspection.

Solidification Unit/Concrete Mixing Enclosure

The Solidification Unit and the Concrete Mixing Enclosure were not observed in the area described in the approved Operation Plan (Attachment A, Page 3). Mr. Bowers said the Solidification Unit was located in the Debris Washer Room. LLNL submitted a Class 2 modification to DTSC on September 22, 2003, for the relocation of the Solidification Unit and other modifications (Attachment O). The Concrete Mixing Enclosure was not installed. The modification request is currently being reviewed by DTSC.

According to LLNL, the current location of the unit in Room 1036, was identified in an as-built drawing submitted to DTSC on 3/28/03 (Attachment O). See Documentation of Completion Table, Mod. No. 99-NC-006 Mod 8-13.

Airlock Room (Room 1027), Debris Washer (Room 1036), Airlock (Room 1037), Chopper/Shredder (Room 1038/1039)

These areas were not inspected due to an on-going activity. LLNL personnel in protective clothing were sorting through the drums for wastes that may not be acceptable for debris washing. Mr. Bowers explained that the wastes from containers are dumped on the sorting table, a flat piece of steel, where wastes that are not acceptable for debris washing are removed and repackaged into another container. The use of a sorting table was not included in the Debris Washing Process in the approved Operation Plan (Attachment N). See Attachment N, for LLNL's explanation on the use of the sorting table. See Attachment C, SOV and Section VI, Violations Section I, Violation 1.

The chopper and the shredder according to Mr. Bowers have the same function except for the particle size. These units have not been in operation. We then proceeded to the Reactive Waste Processing Area.

Reactive Waste Processing Area (Room 1023)

In the Reactive Waste Processing Area, were three glove boxes. Under an acid fume hood I observed the following containers: a mixed waste bag labeled, “contaminated with beryllium, accumulation date-5/25/04"; the date on the bag was the date the waste was removed and not the TSDF date on the drum. See LLNL’s response on the issue on Attachment S). See Attachment C, SOV and Section VI, Violations Section II, Violation 1.c. Next to the bag, was another mixed waste labeled, “needles contaminated with solvents, 2/24/96". A 5-gallon container also containing mixed waste was noted.

Mr. Bowers explained that the wastes came from the sorting activity prior to debris washing. The wastes that do not meet the criteria for debris washing are removed and placed in different containers.

Reactive Materials Cell (Room 1025)

Inside the room is the Uranium Bleaching Unit. On January 9, 2004, LLNL sent a Class 1 permit modification request to convert the Uranium Bleaching Process to Uranium Deactivation Process, replace the process chemicals used and the description. See Attachment O, January 9, 2004 letter, Item 99-NC-005 Mod 9-7.

Reactive Waste Storage Rooms

The Reactive Waste Storage Rooms consist of four rooms: 1019; 1020; 1021; and 1022. Room 1019 was not accessible at the time due to an on-going activity. The other storage areas were inspected. The drums were labeled, well maintained, and all appeared to be in good condition. The following drums observed in the storage areas were noted for operating record review: Q79684; Q79685; Q88186; Q88548. See Item IV.f. Operating Records.

Small Scale Treatment Laboratory (Room 1077)

There was no on-going activity observed at this area.

After leaving Building 695, Ms. Cadwell showed us at a distance, the area where the mobile units used for characterization of transuranic wastes (TRU) were located. The waste characterization project at LLNL is being conducted on approximately 800 drums of TRU wastes for disposal to the Waste Isolation Pilot Plant in New Mexico, a U.S. Department of Energy facility designed for disposal of TRU wastes. We then continued on to Building 693 Container Storage Units.

Building 693 Container Storage Units, See Attachment A, Page 5

Building 693 is divided into four cells: 1000; 1004; 1008; 1012, and 1014 (Classified Waste Storage). Cells 1012 and 1014 contained TRU wastes and were not inspected due to the high reading on the Ludlum 19 radiation meter, which exceeded DTSC’s exposure limit of 2 millirems/hour. The eyewash/shower in storage cells 1000 thru 1008 were tested, and they were in good operating

condition. The drums in the cells were properly labeled and stored, with adequate aisle space between the drums. No violations were noted.

The following drums were noted for records review: Q27529; Q48847; Q53488; Q39769. See Item IV.f., Operating Records for details.

Area 612 Container Storage/Treatment Group, See Attachment A, Page 3

Area 612-4 Receiving, Segregation and Container and Storage Unit(under generator status since 12/4/99)

This area is a Consolidated Waste Accumulation Area (CWAA), divided into five cells -Acids, Poisons, Caustics, and two Flammable Bays. All drums were within the allowed 90-day storage limit. The drums were properly labeled, stored and adequate aisle space between rows was observed.

Building 612 Lab Packing/Packaging Container Storage Unit (under generator status since 12/4/99)

Containers received in this area are segregated by waste type and hazardous characteristics. The containers were properly labeled, segregated, contained and managed.

Area 612-5 Container Storage Unit

Area 612-5 consists of three areas: a tent area, a caged area, and an open area.

The tent area, consisted mainly of stacked storage boxes of mixed and radioactive wastes. Near the entrance to the tent area, Mr. Eissa and I observed two hazardous waste storage boxes, Q25730/W113990 and Q22515/W111523 labeled, HW solid, N.O.S., F002/F005, accumulation date-5/1/97; and 5/5/97, respectively. I asked Ms.Cadwell for a copy of a storage extension letter sent to DTSC for the two containers of hazardous wastes that had been stored for 7 years. Ms. Cadwell said she will get information on the two containers. The next day, May 28, 2004, Ms. Cadwell informed me that the boxes contained mixed wastes but were changed to hazardous waste labels prior to shipment, since the wastes were not regulated as radioactive wastes per DOT requirements (See Item IV.f.2. for more details on Q22515/W111523 and Q25730/W113990). LLNL indicated that the labels on the containers were changed from mixed to hazardous waste on May 24, 2004. The containers were planned for shipment on May 25, 2004, which was postponed. See Attachment C, SOV, andSection VI, Violations Section II,Violation 1. a. The waste was eventually shipped to Envirocare of Utah on June 9, 2004, accompanied by manifest no.23442414 (Attachment Q). All containers in the tent area were properly stored and adequate aisle space between containers were being maintained. Drum no. Q00020594 was noted for operating record review. See Item IV.f.1., Operating Records for details.

The caged area, a classified storage area, consists of four transportainers, 612-5 TR1, 612-5 TR2, 612-5TR3, 612-5 TR4. Transportainers 612-5TR3 and 612-5TR4, were labeled “empty”. The reading on

the Ludlum19 was close to 2 millirem/hour, DTSC's exposure limit. An inventory of the wastes inside the transportainers were requested for later review. The review showed the contents as: 6 containers of mixed, low-level only and hazardous wastes, and a container of low-level only waste for 612-5 TR1 and 612-5TR2, respectively. No violations were noted.

Building 614 Container Storage Unit

Building 614 consists of the west and the east cells with four storage units each. Containers stored in west cells, 1001, 1002, and 1003 were properly labeled and maintained; Cell 1004 was empty. All waste containers stored in east cells 1101, 1102, 1103, and 1104 were properly labeled, and stored. No violations were noted. Posted outside each cell was an inventory showing the amount of wastes in each container. This is the only permitted storage area at the facility where the capacity for the storage units is determined by the actual amount of waste held by the containers. For the other permitted storage units, capacity is based on the maximum capacity of each container stored in the units. See Attachment V, Hazardous Waste Facility Permit (HWFP), Part IV.9. (c).
The following containers were noted for operating records review: Q39757; Q11350. See Item , operating records for detail.

Area 612 Portable Tank Storage Unit

All tanks were labeled radioactive only. No mixed wastes were observed.

Building 612 Container Storage Unit

Building 612 houses the Size Reduction and the Drum/Container Crushing Units and a Container Storage Area. The area was not accessed due to the high reading on the Ludlum 19 radiation meter, which exceeds DTSC's 2 millirem/hour exposure limit. The containers were viewed from outside at a safe distance. The containers appeared to be in good condition.

May 28, 2004

The inspection team consisted of: LLNL personnel -K. Cadwell; R. Michalik; P. Yimbo; W. Kao; S. Terusaki; M. Hayes; V. Salvo; and DTSC- L. Castillo; E. Eissa and D. Anderson. Mr. Mancieri granted us consent to continue the inspection.

Area 612-1 Container Storage Unit

This area consists of tents A and B, an open area, and 3 transportainers. The containers in tents A and B appeared to be properly stored and maintained. Wet spots and liquid were observed on the floor of storage areas 612-1A and 612-1B, due to rain leaks coming from the tent roof. See Attachment C, SOV and Section VI, Violations Section II, Violation 3.b. Containers noted for operating record review were: Q69630; Q43514 and Q70619. See item IV.f.1., Operating Records for details.

The open area consisted of containers of only radioactive wastes.

The transportainers were being used as follows: 612-1TR, contained mostly mixed and low-level waste hepa filters; another transportainer, labeled Q00070557 contained low-level waste; and the third transportainer was empty. Q70557 was noted for record review. See item IV.f.1., Operating Records for details.

Area 612-2 Container Storage Unit

A container, Q88265 was observed with a missing RHWM date (TSDF date received) on the label. See SOV, Attachment C, and Section VI, Violations Section II, Violation 1.b. Container Q88265 was noted for record review. See item IV.f.1., Operating Records for details.

Another container, a 5-gallon, labeled Q72881, RHWM date-10/24/03 was accompanied with a WDR for another container, Q72880 (Attachment I). Container Q72880 was located approximately 6 feet away in a different row. The correct WDR for each container was found by Mr. Eissa and was handed to LLNL personnel for placement in the WDR plastic pouch. See Attachment C, SOV and Section VI, Violations Section II, Violation 2. The Container Contents Report for Q72880 and Q72881 were requested and reviewed. See Attachment I for details.

The containers in Area 612-2 appeared in good condition, and were properly stored. The eyewash/shower was in good operating condition. On the east side of the storage area, Mr. Eissa and I observed a sump containing at least 4 inches of liquid. The inspection log for this area on May 28, 2004, was requested for later review. See Attachment C, SOV, and Section VI, Violations Section II, Violation 3.a.

Other containers noted for operating records review were: Q31342; Q88248;Q201247. See item IV.f.1., Operating Records for details.

Area 612 Tank Trailer Storage Unit

This storage area was empty. I observed at least 6 inches of liquid at the lowest point of the storage unit. A copy of the inspection log for May 28, 2004 was requested for later review. See item IV. g. Operating Records for details. See Attachment C, SOV and Section VI, Violations Section II, Violation 3.a.

Building 625 Container Storage Unit

The storage unit is divided into east and west areas. The east area contained mixed transuranic (TRU) and TRU only wastes. The TRU wastes are currently being characterized for shipment to the Waste Isolation Pilot Plant (WIPP) in New Mexico. According to LLNL, they are half-way done with the TRU characterization. The area was viewed from the outside due to the >2millirem reading on the radiation meter (Ludlum 19), which exceeds DTSC's exposure limit. The west area was inspected and the

containers appeared to be in good condition, properly labeled, and adequate aisle space was being maintained between pallets. The eyewash/shower was found to be operating in good condition.

From Area 612, we proceeded to Area 514.

Area 514 Complex, under Interim Status, See Attachment A, Page 6

Area 514 Complex is undergoing closure. DTSC approved the Closure Plan on April 30, 2004.

At Area 514, we were met by John Bowers, and Craig Fish, Environmental Group, Space Action Team Leader. The tank farm, and the Quadruple Tank Unit had been emptied. All containers in the Container Storage Areas had been removed. The eyewash/showers were still in good operating condition except one that was taken out of commission on April 6, 2004, for scheduled removal. The fire extinguishers and eyewash/shower continue to be inspected as indicated on the tags attached to the units. No violations were noted.

After the walk-through, we all proceeded to a Conference Room at T-1545. I provided Mr. Yimbo with a list of containers that were noted during the walk-through. I requested a Container Contents Report for each container listed. For containers with storage dates over a year, I asked for the SiteTreatment Plan listing and/or any extension letter that had been sent to DTSC pertaining to the waste.

June 1- 3, 2004

Vehicle Inspection

Mr. Yimbo granted us consent to continue the inspection. On June 2, 2004, we conducted an inspection of the only vehicle available for inspection, that is used by LLNL for hauling hazardous waste. The LLNL marking on the sides of the vehicle were clear and legible as required. The vehicle did not contain any hazardous or mixed waste at the time. A copy of the Hauler registration was requested for later review. No violation was noted from the vehicle inspection.

Records Review

Records reviewed include but not limited to: manifests; inspection logs; treatment/process logs; operating records; waste analysis records; incident records; waste inventories; Emergency Coordinator list; permit modification requests; letters/records to document compliance with permit requirements, etc. See Item IV, Records Review, for details.

RCRA 6002

As part of our inspection, I informed Mr. Yimbo and Ms. Salvo of the requirement to complete the RCRA 6002 inspection documents that direct federal purchasing decisions for recycled content products; the same documents were completed by LLNL the previous year. The completed forms are shown on Attachment W.

June 3, 2004

A brief meeting was conducted with LLNL and DOE (See Attachment U for List of Attendees) where I discussed the potential violations we found so far during our inspection. I informed them that I have requested copies of documents for my review back in my office as part of the inspection. I stated that I will be returning for another meeting to discuss in more details my findings. I thanked them all for their presence during the brief meeting.

VI. VIOLATIONS

SECTION I: CLASS I VIOLATIONS/REQUIRED CORRECTIVE ACTION

Treatment of Hazardous Waste in an Unauthorized Unit

1. LLNL violated Health and Safety Code, section 25202 (a) and California Code of Regulations, title 22, section 66270.30(a), 66270.30 (l)(2) and 66270.42(b) and Hazardous Waste Facility Permit (HWFP), Part IV.19., in that since on or about May 4, 2004, LLNL has been using a stainless steel metal pan/sorting table, an unauthorized treatment unit, in B695 Airlock (Room 1027), to physically segregate/sort mixed wastes prior to introduction into the debris washer.

   The approved Operation Plan for the Debris Washer did not include the use of a sorting table/pan for segregating hazardous wastes prohibited from debris washing. The hazardous waste items for debris washing are slid off the metal pan into the debris washer box for processing. The items prohibited from washing are repackaged into new containers.

   Evidence: Attachment N, Debris Washer Process Description
   Witnesses: Luz Castillo; Essam Eissa

   LLNL's Response to the SOV's Corrective Action

   Based on its response dated August 16, 2004 (Attachment C) , LLNL stated that the facility had ceased the use of the sorting table/pan immediately as DTSC directed and will work with the DTSC permit writer to resolve the issue.

   In addition, LLNL stated that the SOV may not be applicable to its operation since the sorting table/pan is considered an equipment for handling waste ergonomically to avoid the injury to employees and to prevent spilling wastes. LLNL also referred to the sorting table/pan as a waste handing equipment used to transfer wastes throughout the waste management facilities.

In LLNL's response, the facility has requested DTSC to drop or re-classify the violation as a minor violation. The facility has indicated that the use of the sorting table/pan does not represent a significant threat to human health , safety or the environment; the relative hazard associated with segregating the waste is extremely low, and the sorting and segregation is in inside a permitted hazardous waste facility that is equipped with secondary containment and a filtered ventilation system to prevent any exposure to employee or public. LLNL also mentioned that the waste removed from the sorting was properly packaged for storage and processing; and the location of the unit the type of waste handled and the subsequent management of the waste did not pose a risk to human health and the environment.

DTSC's Response

LLNL has complied with the required corrective action in the SOV by immediately ceasing the use of the sorting table/pan.

DTSC does not agree with LLNL's statement that sorting table/pan could be compared to a waste handling equipment such as forklifts, drum dolly, drum tippers, etc. due to the following reasons:

1. The sorting table is a treatment unit, where waste streams are combined and are physically prepared and sorted to be treated in the debris washer. LLNL's response to DTSC CEI 2004, Item #7, dated June 14, 2004, states, "The sorting table is used for a variety of reasons including the preparation of waste for transfer to other processing units (e.g. debris washer, etc.) ..." See Attachment N. During the inspection, personnel were sorting through a container separating debris for treatment in the debris washer. See Attachment S, LLNL's response- B695 waste in fume hood discussion of waste in photographic tray.

2. The sorting table/pan is not a waste handling equipment used to move waste container from one area to another or between waste management units; It is used for unloading, sorting, isolating and packaging of hazardous wastes.

In response to LLNL's statement that the use of the sorting table/pan does not represent a significant threat to human health, safety or the environment, this determination could only be verified by means of a permit modification and review process. As part of the process, DTSC at a minimum would require the submittal of: detailed description of the unit being used or proposed to be used; information on potential pathways of exposure of humans or environmental receptors to waste constituents, hazardous constituents and reaction products, and potential magnitude and nature of such exposures; and other additional information determined to be necessary for evaluation of compliance of the unit with the environmental performance standards.

On September 17, 2004, LLNL submitted a Class 1 Permit Modification request to DTSC, for the use of the sorting table. On November 23, 2004, DTSC has requested additional information to determine if LLNL's use of the sorting table would substantially alter the permit conditions or reduce the capacity of the facility to protect human health and the environment. DTSC will make a final determination on the

classification of violation for the use of the sorting table for treatment without authorization upon receipt of the additional information requested by DTSC.

Commingling Incompatible Wastes in the Same Container

2. LLNL violated California Code of Regulations, title 22, section 66265.177 (a), in that on or about February 20, 2004, a Laboratory Researcher in Building 235, placed hazardous waste solvents (methanol, ethanol, acetone and water) and 70 % nitric acid, in a 5-gallon poly container, causing the incompatible wastes to react and generate nitrous oxide gases.

Evidence: Attachment G
Witnesses: Luz Castillo; Essam Eissa

Corrective Action

No further submittal is required. Based on LLNL's August 16,2004 response (Attachment C), the facility has made sure that incompatible hazardous wastes such as solvent mixtures and concentrated acid mixtures, are managed separately in compatible containers and all personnel handling such wastes are trained. The employee involved in the incident was provided additional training. See Attachment C.

The following Class 1 violations were found subsequent to the inspection and were not listed in the SOV issued on July 19, 2004

Certifying Prohibited Waste for Land Disposal Without Meeting Treatment Standards

3. LLNL violated Health and Safety Code 25189.2 (a), and California Code of Regulations, title 22, section 66268.7.(a)(3), in that on or about June 9, 2004, a prohibited waste, Q86925/W209971, not meeting land disposal restrictions treatment standards was shipped off-site and certified as meeting treatment standards for land disposal, to wit:

Based on the analytical results for W209971 dated November 14, 2002, the hazardous constituents for toluene and p- & m- xylene at 120 mg/kg and 280 mg/kg, were not below 10 mg/kg and 30 mg/kg, respectively, as specified in the table "Treatment Standards for Hazardous Wastes", California Code of Regulations, title 22, section 66268.40.

Although W209971 did not meet LDR treatment standards, the shipment to Envirocare on June 9, 2004 was accompanied with a certification, " I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D. I believe that the information is true, accurate, and complete..."

Evidence: Attachment H, Manifest 23442420; WDR's; Analytical Results
Witnesses: Luz Castillo; Essam Eissa

Corrective Action

On July 20, 2004, Ms. Salvo informed me via electronic mail (Attachment H) that Envirocare was contacted. Waste W209971 has not been placed into the ground yet, and Envirocare has put a hold on W209971 as well as W209973. See Attachment H for details.

Within 30 days of receipt of this report, LLNL shall submit a procedure and training that would be given to employees to ensure timely and accurate hazardous waste characterization, interpretation and validation of analytical results. LLNL shall indicate the necessary steps being taken to prevent the same incident from happening in the future. In addition, LLNL shall submit to DTSC, documentation that Envirocare has treated waste W209971 to meet LDR treatment standards prior to disposal into the land.

Failure to Comply With Waste Analysis Plan

4. LLNL violated Health and Safety Code 25202 (a), California Code of Regulations, title 22, section 66270.30 (a) and 66264.13, and HWFP, Part IV. 5.p in that on or about May 18, 2004, LLNL failed to make an accurate waste determination on waste W209971, to comply with land disposal restrictions requirements, to wit:

   LLNL completed a Waste Disposal Requisition Change Request on May 18, 2004, indicating that hazardous concentrations of: tetrachloroethylene; trichloroethylene; benzene; toluene; 1,1,1-trichloroethane; methylene chloride and 2-butanone (methyl ethyl ketone) were below 5 mg/kg. However, analytical results for W209971, showed that concentrations of toluene and p- & m- xylene were 120 mg/kg and 280 mg/kg, respectively. Treatment Standards per California Code of Regulations, title 22, section 66268.40 are: 10 mg/kg for toluene and 30 mg/kg for p- & m- xylene.

   Evidence: Attachment H, WDR Change Request for W209971; Analytical Results.
   Witnesses: Luz Castillo; Essam Eissa

   Corrective Action

   Within 30 days of receipt of this report, LLNL shall submit to DTSC, procedure and training to be given to employees to ensure timely and accurate hazardous waste characterization, interpretation and validation of analytical results. LLNL shall indicate the necessary steps being taken to prevent the same incident from happening in the future.

   Storage Greater Than One Year
   This violation is a repeat of the 2000, 2002 and 2003 CEI

5. LLNL violated Health and Safety Code, sections 25202 (a) and 25188, California Code of Regulations, title 22, section 66270.30 (a) and Hazardous Waste Facility Permit (HWFP) ,Parts III.2. (b) and IV.10 (a)

in that on or about April 30, 2002 through May 21, 2004, LLNL stored Q63853/W209973 for greater than one year in Area 612-1A, without authorization, to wit:

LLNL received Q63853/W209973 at the permitted area on April 30, 2001. Based on generator information provided on the WDR, the waste did not meet LDR treatment standards and were placed on the Site Treatment Plan. Analytical results dated June 24, 2002 (sample collected on February 25, 2002) showed that the waste met LDR treatment standards, as indicated on a WDR Change Request completed on May 19, 2004.

LLNL submitted a notification of waste stored more than one year for Q63853/W209973 on May 21, 2004, two years after the one year limit was exceeded.

Evidence: Attachment H, May 21, 2004 letter and WDR Change Request for Q63853/W209973; Analytical Results;

Witnesses: Luz Castillo; Essam Eissa

Corrective Action

Effective immediately, all requests for continued storage of mixed wastes meeting LDR standards shall be made to DTSC at least 30 days prior to reaching the one year allowable limit in the HWFP.

SECTION II: CLASS II VIOLATIONS/REQUIRED CORRECTIVE ACTION

Failure To Comply With Labeling Requirements

1. LLNL violated Health and Safety Code, section 25202(a), California Code of Regulations, title 22, section 66270.30 (a) and HWFP Part 11. (a) in that, LLNL failed to comply with the container labeling requirements, to wit:

a. On or about May 27, 2004 at Area 612-5, two (2) boxes, Q00025730 and Q00022515 containing mixed wastes (spent inorganic solid legacy wastes contaminated with trichloroethylene, methylene chloride and toluene, EPA waste codes F002 and F005) were labeled as hazardous wastes.

LLNL changed the mixed waste labels to hazardous waste on 5/24/04 for proposed shipment on 5/25/04 which was postponed. LLNL indicated that the original labels were mixed waste labels but were changed to hazardous waste, since the radioactive components in the wastes were not regulated as radioactive per DOT regulation.

Evidence: Attachment Q
Witnesses: Luz Castillo; Essam Eissa

Corrective Action

The wastes were shipped as hazardous waste to Envirocare of Utah on June 9, 2004, Manifest no. 23442414.

Although no further submittal is required on the above violation, LLNL shall ensure compliance with HWFP, Part IV.11.(a), in that LLNL shall maintain original generator information on all containers of hazardous/mixed wastes, until such time the waste is shipped from the Permittee's hazardous waste management unit to an off-site treatment or disposal facility.

b. On or about May 28, 2004 at Area 612-2 , the date of acceptance at the hazardous waste management unit was not marked on the label of a 5-gallon container (Q00088265) of mixed waste aqueous acid solution, corrosive, (EPA waste codes D002, D005, D006, D007, D008, D009, D011, D019, D022, D028, D029).

A review of the Container Tracking History of Q00088265 indicated that the waste was received at Area 612-2A on April 1, 2004.

Evidence: Attachment I, Container Contents Report for Q00088265
Witnesses: Luz Castillo; Essam Eissa

Corrective Action

This violation has been corrected. Based on LLNL's submittal dated July 26, 2004, the acceptance date on the container label of Q00088265, was marked on the July 19, 2004, the same day the SOV was issued.

c. On or about May 27, 2004, at Building 695's Reactive Waste Processing Area (Room 1023), mixed waste bottles and bags contaminated with beryllium (observed under an Acid Fume Hood), had a label marked 5/25/04, the date the waste was removed from container Q00038480/W130110, instead of the original TSDF acceptance date of 9/27/98 on the container.

The mixed waste bags and plastic bottles were removed as LLNL personnel were sorting through the wastes on a stainless steel table to separate debris for treatment into the debris washer located in Room 1036.

Evidence: Attachment S
Witnesses: Luz Castillo; Essam Eissa

Corrective Action

No further action is required. Based on LLNL's July 26, 2004 submittal (Attachment C), the above wastes have been treated.

Failure to Follow the Waste Analysis Plan

2. LLNL violated Health and Safety Code, section 25202(a), California Code of Regulations, title 22, section 66270.30 (a) and HWFP Part IV.5. (a) and (d), Operation Plan, Volume 4, section 3.2., in that on or about May 28, 2004, in Area 612-2, containers of hazardous mixed waste aqueous acid solution, toxic, corrosive wastes, Q00072881 (5 gal.) and Q00072880 (30 gal.) were accompanied with the incorrect Waste Disposal Requisitions(WDRs).

   Containers Q00072881 was accompanied with WDR W240645 and Q00072880 was accompanied with WDR W240644; the WDRs on the containers were switched. The two containers, approximately 6 feet away, were located in different rows. A review of the Container Contents Report for the two containers showed that the wastes were from the same waste stream, TSDF waste profile no. SJ97-0064.

   Evidence: Attachment I, Container Contents Report for Q00072881 and Q00072880; Attachment B, HWFP Part IV.5 (a) and (d) and Waste Analysis Plan, Volume 4, section 3.2.

   Witnesses: Luz Castillo; Essam Eissa

   Corrective Action

   The correct WDR for each container was found by DTSC during the inspection, and handed to LLNL for placement in the WDR plastic pouch provided for the containers.

   No further action is required. However, LLNL shall ensure that a correct and completely completed WDR accompanies each container, as indicated in the approved Operation Plan.

   Failure to Accurately Record Observations in an Inspection Log

3. LLNL violated California Code of Regulations, title 22, section 66264.15 (b)(1) and (d) in that on or about May 28, 2004, the facility failed to accurately record observations noted during an inspection, to wit:

a. The presence of rainwater (at least 4 inches) in a sump located on the east side of Container Storage Area 612-2, and in Area 612, Tank Trailer Storage Unit (at least 6 inches at the lowest point) was not noted in the Daily Log. The inspection log completed on 5/28/04 at 8:00 a.m. had indicated that rainwater that has accumulated in the permitted secondary containment has been removed within 24 hours.
b. The presence of wet spots and liquid (from a leaking tent roof in Areas 612- 1A and 612-1-B) were not recorded in the inspection log.

   Evidence: Attachment K, Daily Inspection Log for Area 612 Facility, 5/2704 & 5/28/04
   Witnesses: Luz Castillo; Essam Eissa

Corrective Action

No further action is required. Based on LLNL's July 26, 2004 submittal (Attachment C), technicians were instructed to note all observations (including the presence of rainwater inside a storage unit) on the inspection log along with corrective actions needed.

VII. CONCLUSIONS

On July 19, 2004, Mr. Eissa and I returned to the facility for the issuance of a Summary of Violations. Mr. Eissa and I proceeded to T-1575, Yosemite Room for the meeting. I started the meeting by thanking all the attendees (Attachment U) for their presence at the meeting. I began by identifying the areas we inspected during the May 27 and 28 and June 1-3, 2004, Compliance Evaluation Inspection. I informed them that based on our inspection violations were found. I went through the violations and the corrective action needed for each violation.

After going through the violations, I discussed the issues on two containers of wastes W209971 and W209973, that were received at RHWM in April 2001. I informed them that LLNL sent a notification of the wastes that were stored for more than a year on May 21, 2004. I expressed my concern on the length of time it took LLNL to sample to determine if the wastes meet Land Disposal Restriction Treatment Standards. I mentioned that I had requested a copy of the analytical results for the wastes (W209971 and W209973) from Vicki Salvo, for my review. I also stated that additional training records have been requested for my review.

In response to a question on how additional violations will be documented after the issuance of the SOV, I stated that additional violations found will be incorporated in the Inspection Report which will be sent to the facility.

Ms. Jackson asked how the facility could be compared to other facilities with the same complexity. I responded that it would be hard to compare facilities because of the difference in the type of wastes they handle. I stated that the facility was doing very well in managing their wastes. I commented that there were still Class 1 violations but the facility has improved in the management of their wastes. I added that I hope to see better compliance in the future, an inspection without any Class 1 violation. Ms. Jackson said that she hopes they will meet our expectations.

I complimented LLNL's efforts, especially Ms. Salvo and Mr. Yimbo, in providing the records we needed to complete our inspection. I thanked them for their extreme cooperation during the inspection. A copy of the SOV was provided to LLNL after it was signed by Ms. Jackson.

After the meeting, Mr. Eissa and I met with Ms. Salvo, Mr. Yimbo and Mr. Vukelich. Ms. Salvo gave me a copy of the analytical results for W209971 and W209973. As she handed me the analytical results, Ms. Salvo said management wanted her to tell me, that after reviewing the analytical results for the wastes, LLNL found out that W209971 did not meet the treatment standards for toluene and xylene. Since the wastes had already been shipped off-site, I asked Ms. Salvo, if the land disposal facility has

been notified. Ms. Salvo said they were working on it. As for the timeliness of the sample collection, Ms. Salvo said that samples are usually collected within 30 days of receiving the waste in RHWM but what happened to the two containers was an isolated incident.

Mr. Eissa and I also met with Mr. John Vukelich, Training Supervisor and Mr. Yimbo, and discussed the training issues I encountered in my review of employee training records. See training records review in Item IV.c. and Table I, Training Summary.

Mr. Eissa and I left the facility at approximately 12:30 p.m.

VIII. TABLES

Table I - Training Records Summary, 10 pages.
Table II - Materials/Waste Inventory, 1 page.
Table III - Waste Characterization Tracking Summary W209971 and W209973, 2 pages.

IX. ATTACHMENTS

Attachment A -	Site Maps, 4 pages.
Attachment B-	Hazardous Waste Facility Permit, 55 pages. Consent Order, 14 pages. Waste Analysis Plan, Volume 4, Section 3.2 , 2 pages.
Attachment C-	Summary of Violations, 6 pages Response to Summary of Violations dated July 26, 2004, 8 pages. Response to Summary of Violations dated August 16, 2004, 20 pages.
Attachment D-	Building 233 Closure Approval of Phase i Work Plan for the Building 233, 6 pages. Container Storage Unit/Area 514 Closure Plan Approval, April 30, 2004, 2 pages.
Attachment E-	Manifests: 21766614; 21766644; 21766518; 97259009, 9 pages.
Attachment F-	Training Records; LLNL responses to Training Questions, 33 pages.
Attachment G-	Building 235 Incident, 1 page. LLNL Fire Department Responses at the Site, 2 pages.
Attachment H-	Notification of Wastes Stored More Than One Year at LLNL/Waste Analysis, 1 page.

Issue re: sampling W209971 and W209973, fax dated June 28, 2004, 1 page. Records/Waste Analyses for W209971 and W209973/Manifest 23442420, 31 pages.

Attachment I- Container Contents Report for Q00072881, Q00072880 and Q00088265, 11 pages.

Attachment J- Treatment Unit Inspection and Process Logs, 45 pages.

Attachment K- Container Storage Area Inspection Records, 5 pages.

Attachment L- Documents on SB14 and 2003 Annual Report, 2 pages.

Attachment M- Hauler Registration, 1 page.

Attachment N- Sorting Table Issue/LLNL Responses- fax dated June 14 & 17, 2004, 2 pages. Approved Operation Plan Debris Washer Process Description, October 1998 revision, 6 pages.

Attachment O- As-Built Drawings Cover Letter dated March 28, 2004, 1 page.
Permit Modification letters dated September 22, 2003, 17 pages and January 9, 2004, 18 pages.
Documentation of Completion (Work order, etc), fax dated June 8, 2004, 4 pages.

Attachment P- Authorization to Commence Operation at DWTF, 2 pages.

Attachment Q- LLNL Memo on Waste Classification for DOT dated May 28, 2004, 1 page. Containers Q25730/W113990 and Q22515/W111523/Manifest No.23442414, 6 pages.

Attachment R- HWFP Part V. Compliance Schedule and Submittal Letters, 22 pages.

Attachment S- B-695 Waste in Fume Hood FH-1 Issue, 8 pages.

Attachment T- DTSC Status Request of Containers (Storage Extension Requested), 4 pages.

Attachment U- List of Attendees, 3 pages.

Attachment V- March 5, 2004 letter, 2 pages.

Attachment W- RCRA 2002 Facility Questionnaire, 12 pages.

X. REPORT WRITTEN BY:

(Original signed by Luz Castillo)
Luz T. Castillo

Senior Hazardous Substances Scientist
Statewide Compliance Division

December 3, 2004
Date